WISDOM

NEW WISDOM INVESTMENT LIMITED

Product Description

KL5M/KL8M/KL12M

Miner's Cap Lamp With Cable

English

Espanol

中文

Brighter • Lamp with cable

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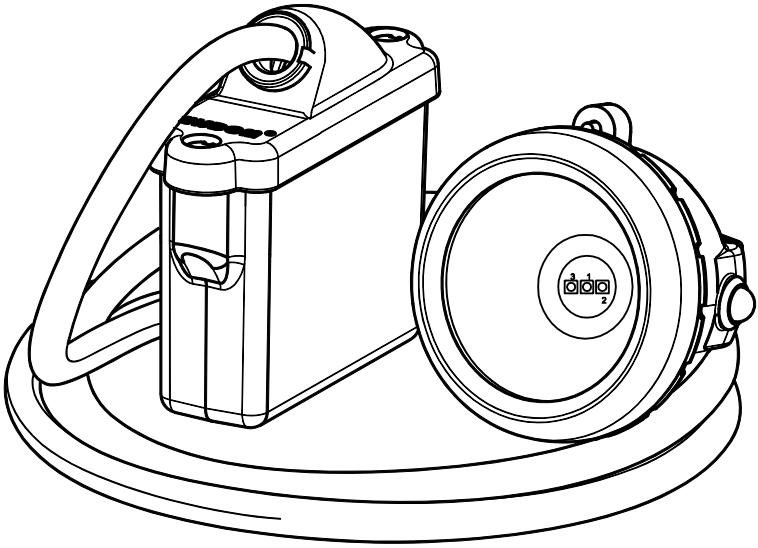


English

1 Features

New WISDOM corded miner cap lamps are LED li-ion cap lamps with innovative design, which applies the technologies of the latest 235 lumens CREE LED lighting and 6.6Ah li-ion battery for KL5M, applies the technologies of the latest 301 lumens CREE LED lighting and 8.8Ah li-ion battery for KL8M, applies the technologies of the latest 359 lumens CREE LED lighting and 12.4Ah li-ion battery for KL12M, to make them safer, brighter and lighter. It is designed to withstand the harshest underground conditions, like coal mines, metal mines, etc. The significant features are as follows:

1.1 Stable and super bright

Advanced CREE LED light source and outstanding driving circuit are applied to KL5M main light source to keep its brightness (16,000lux in 1m). The working time of standard version, long version and super-long version are more than 13h, 16h and 24h respectively.

Advanced CREE LED light source and outstanding driving circuit are applied to KL8M main light source to keep its brightness with three versions of working time. The working time of standard version, long version and super-long version are more than 13h, 16h and 24h respectively.

359 lumens CREE LED light source and outstanding driving circuit are applied to KL12M main light source to keep its brightness (25,000lux in 1m) . The working time of standard version, long version and super-long version are more than 13h, 16h and 24h respectively.

During the whole working time, the brightness remains the same from the beginning to the end. The delicately designed reflector and ultra-clear glass help reduce the light absorption, which greatly improves the brightness.

1.2 Small, light and portable

The corded lamps use LED light source, which is much smaller in size and produces less heat, so the lamp holder can be miniaturized. Moreover, miner lamp KL5M/KL8M/KL12M uses li-ion battery, whose weight is only 1/3 of the traditional led acid battery.

1.3 Safe, reliable and maintenance-free

The li-ion battery is maintenance-free. Moreover, the battery pack PCB can protect the battery from over charge, over discharge, over current and short circuit so that the battery won’t explode or burn. Therefore, the safety and reliability of KL5M, KL8M and KL12M are highly well guaranteed.

1.4 Explosion- proof and super impact-resistance

The housing is made of bulletproof PC of German Bayer brand. The optimized mold design not only strengthens the hardness of the housing but also lessens the internal stress, which makes the corded lamps stronger in impacting resistance and more durable in life span.

1.5 Super water-proof

The corded cap lamps are super waterproof with the well-designed waterproof head lamp globe, battery box, and button switch and stainless steel metal parts. Therefore, it is able to work stably under harsh working conditions.

1.6 Environmentally-friendly

The corded cap lamps are designed in accordance with RoHS, which is strictly followed during the whole process, from material selection to production craft design.

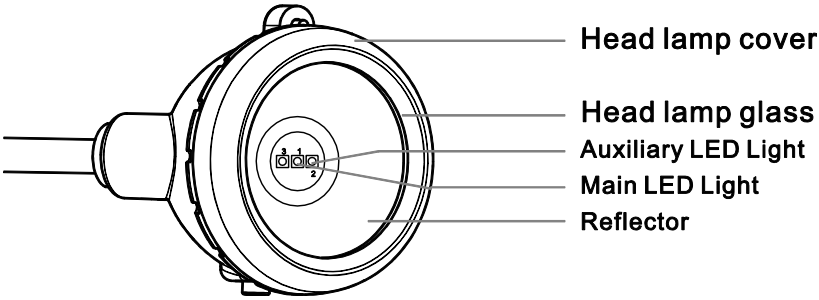
1.7 Longer life span

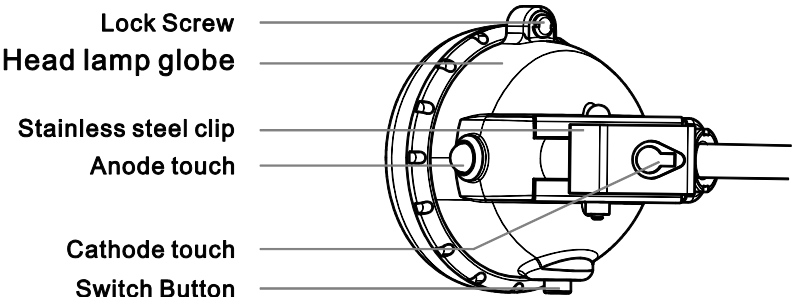
The corded cap lamps can work more than 13 hours after fully charged. Its main light source has a life span of more than 100000h after applied to the lamp. li-ion battery can be charged more than 1200 cycles if the lamp works in reasonable conditions. Therefore, there is no need to replace the light source and battery during its whole life span.

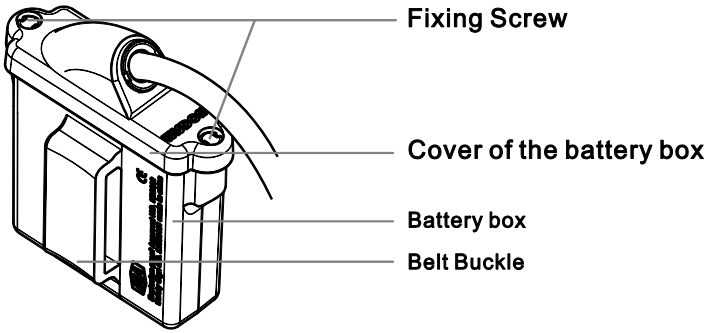
2 Technical Specifications

Features	KL5M			KL8M			KL12M		
Working time version	Standard	Long	Super -long	Standard	Long	Super -long	Standard	Long	Super -long
Rated capacity	6.6Ah			8.8Ah			12.4Ah		
Rated voltage	3.7V								
Continuous working time	13h	16h	24h	13h	16h	24h	13h	16h	24h
Main light LED working voltage	3.0V								
Main light LED working current	580mA	430mA	340mA	800mA	580mA	430mA	1000mA	800mA	580mA
Main light power	1.8W	1.3W	1W	2.4W	1.8W	1.3 W	3.0W	2.4W	1.8W
Main light luminous flux	235 Lm	178Lm	148Lm	301Lm	235Lm	178Lm	359Lm	301Lm	235Lm
Lamp lighting Degree (initial Lighting degree)	16000 Lux	11000 Lux	10000 Lux	23000 Lux	16000 Lux	11000 Lux	25000 Lux	23000 Lux	16000 Lux
Main light life span	100000H								
Auxiliary light Power	0.4W								
Auxiliary light life span	40000H								
Short Circuit Protect time	<320μs								
Life span of the battery (recharges)	1200 cycles (in reasonable working conditions)								
Charging by NWB-20	6H			8H			N/A		
Charging by NWB-25	4H			5H			6H		
Main cable	1.4M / 1.65M								
Dimensions (size of the battery box)	95x38x84mm			95x38x102mm			95x38x102mm		
Weight	500g			550g			550g		

3 Parts


Head lamp cover
Head lamp glass
Auxiliary LED Light
Main LED Light
Reflector

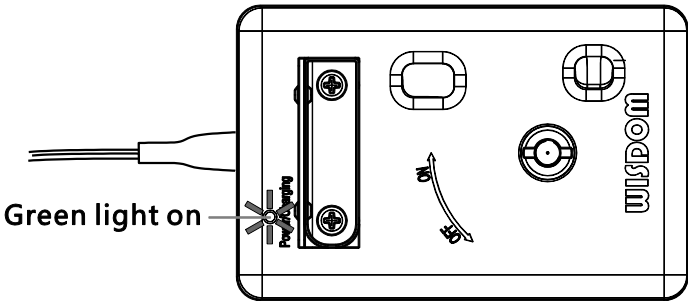

Lock Screw
Head lamp globe
Stainless steel clip
Anode touch
Cathode touch
Switch Button


Fixing Screw
Cover of the battery box
Battery box
Belt Buckle

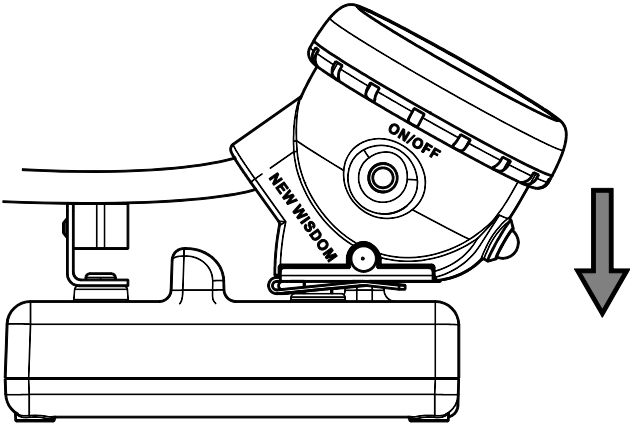
4 User Guide

4.1 Charging

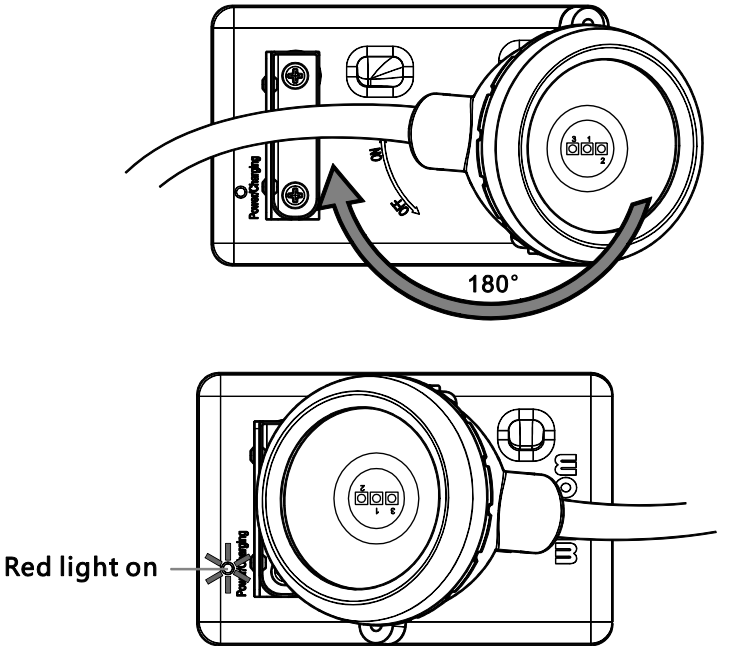
(1) Connect the single charger to the power supply or switch on the charger rack, the indicator light of the charger turns green.



(2) Fix the brass pin (cathode) of the charger into the hole of the cap lamp clip.



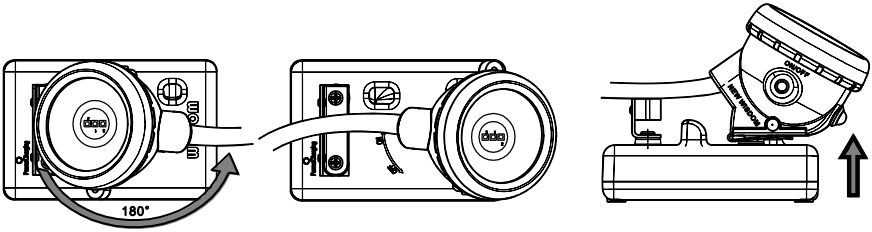
(3) Rotate the head lamp 180 degrees clockwise, make sure the anode touch of the head lamp is closely connected to the connected metal base (anode). Then the indicator light turns red, which means the lamp is being charged.



(4) When it's charged by NWB-25/NWB-25A single portable charger or the intelligent chargers racks, the indicator light of the charger keeps flashing from green to red, it means the battery has been charged at least 90%. The cap lamp can work more than 13h continuously if charging is stopped at this moment. If the indicator light of the charger flashes green only, then the battery has been fully charged.

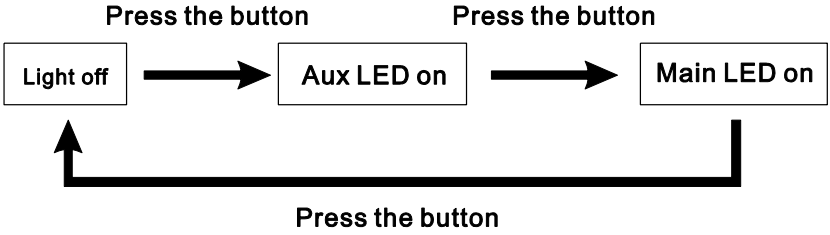
(5) When it's charged by NWB-20 single portable charger or the traditional chargers racks, the battery has been fully charged if the indicator light of the charger turns green.

(6) Rotate the head lamp 180 degrees anti-clockwise; take it away from the charger.



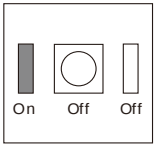
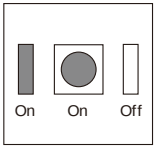
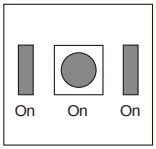
4.2 Switch

The electric switch of KL5M, KL8M and KL12M are waterproof. It works as follows:



4.3 Battery Indication

When the cap lamp is off, press its switch more than 2 seconds. Then the soft light of the main and auxiliary light source will indicate the remaining battery power. The indication information is as following:

battery	indicator
Battery power≤1/3	
1/3< battery power≤2/3	
Battery power >2/3	

The indication lasts for 6 seconds, the cap lamp restores to be off.

Note: The cap lamp battery indication is general, just for your reference.

4.4 Low battery warning

(1)The normal battery warning:

About 1 hour before the battery power is out, the main LED light of KL4M,KL5M, KL8M,KL12M flashes softly (one time flashing for every five seconds) to remind the user that the power is nearly used up and needs to be recharged.

If you don't want the flashing to affect the normal lighting, you can press the switch more than 2 seconds. The main light source will flash two times, and the flashing is away. Then the cap lamp restores to normal working.

(2)The least battery warning：

When the battery is only able to keep the cap lamp on for 10 minutes, its main light source will flash with the strong and soft light quickly (one time flashing for every two seconds). This information is to remind you that the battery is nearly used up and it needs recharging or exchanging to the auxiliary light source.

5 Trouble and Troubleshooting

Trouble description	Trouble analysis	Troubleshooting
Light is not on when pressing the button	Battery power is used up	Charge the lamp
Insufficient working time	Battery is not fully charged	Making sure the lamp well connected to the charger when charging

6 Notes

(1) The miner lamp is half charged before delivery, please fully charge it before using.

(2) Please use our own matched single chargers or charging racks to charge the miner lamps. Please don't use other chargers which are not specially designed for the li-ion battery, or the cap lamp may be damaged.

(3) Please clean the head lamp glass timely for the best performance.

(4) If the lamps need storing for a long period, please repeat the following maintenance steps every two months: fully charge→completely discharge→charge for 1 hour.

7 Safety Warnings

(1) Please don't shoot at eyes directly while the lamp is working since the strong light will hurt eyes.

(2) Please don't disassemble the cap lamp, or it may cause potential troubles related to safety, reliability, water resistance to work underground.

(3) Please don't crash and strike the lamp.

(4) Please don't charge the lamp underground.

(5) Please keep the lamp away from fire sources.

(6) Please don't maintain the lamp underground. All maintenance must be done on the ground!

(7) Please don't disassemble or repair the battery components by yourself.

(8) Please recycle the discarded cap lamp together rather than throwing them away without disposing.

8 Package

Paper box for each piece of miner lamp: 170 x 100 x 83 mm, 0.6 kg

Master carton (20 boxes in): 38 x 22.5 x 44 cm, 13 kg

9 Part Drawing

NEW WISDOM KL5M/KL8M/KL12M
PART DRAWING since 2013.03

1.head lamp cover

2.head lamp glass

3. seal ring of the head lamp cover

4.reflector

5.LED and aluminum heat sink

6.button united parts

7.main circuit board

8. head lamp globe

9. nut, seal ring to fix the cable

10.cap lamp clip united parts

11.lock screw of the head lamp cover

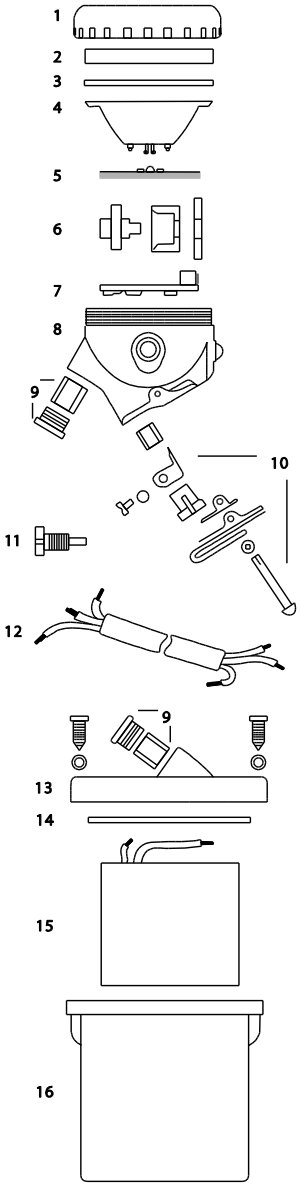
12.main cable

13. cover of the battery box

14. seal ring of the battery box

15. 6.6Ah(KL5M)/8.8Ah(KL8M)/
12.4Ah(KL12M) Li-ion battery with PCB

16. battery box



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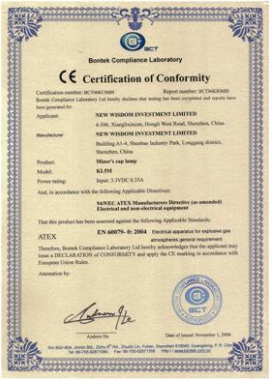
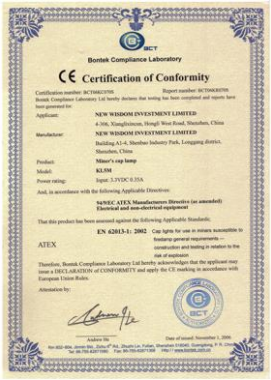
10 Product patents and certifications

For more information, please visit our website.



KL5M-CE certificate

KL5M-CE certificate



KL5M-CE certificate

KL5M-CE certificate

KL5M-CE certificate

KL5M-CE certificate

KL8M-CE certificate

KL8M-CE certificate

KL5M-C—CE certificate

Computer software copyrigh

Computer software copyright

KL5M/KL8M/KL12M-CE certificate

Patent for utility model

Patent for utility model

Patent for utility model

Patent for utility model

Patent for utility model

Patent for utility model

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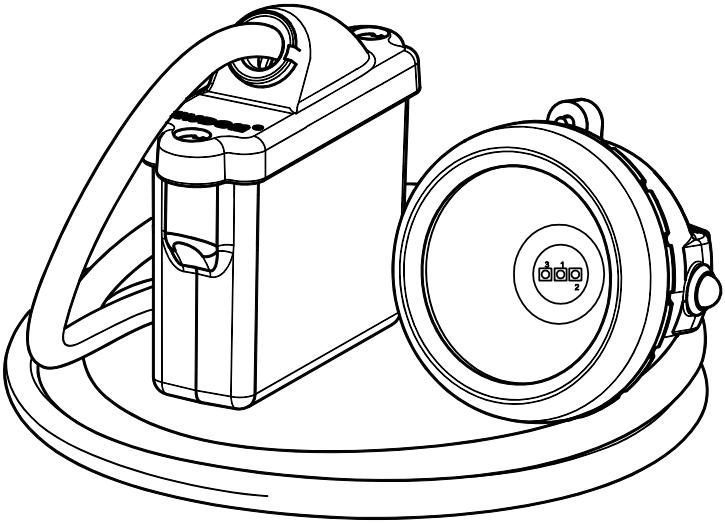


Espanol

1. Características

KL5M, KL8M y KL12M son LED Li-Ion lámpara diseños de innovadores, las tecnologías de la última 235 lumens de iluminación LED de CREE LED y 6.6Ah Li-ion es para KL5M, las tecnologías de la última 301 lumens de iluminación LED de CREE LED y 8.8Ah Li-ion es para KL8M, las tecnologías de la última 359 lumens de iluminación LED de CREE LED y 12.4Ah Li-ion es para KL12M, como construir las lámparas mas brillante y más ligera. La lámpara de casco está diseñado para soportar las más duras condiciones del subsuelo, tales como las minas de carbón y las minas de metal, etc. Las características importantes son los siguientes:

1.1 Super brillo y stable

La luz LED de 235 Lumens con 6.6Ah bateria y el circuito de buen diseño se emplean en el poder de la luz principal KL5M para mantener la luz con un brillo estable y superior (16000lux en 1m). La luz LED de 301 Lumens con 8.8Ah bateria y el circuito de buen diseño se emplean en el poder de la luz principal KL8M para mantener la luz con un brillo estable y superior (23000lux en 1m). La luz LED de 359 Lumens con 12.4Ah bateria y el circuito de buen diseño se emplean en el poder de la luz principal KL12M para mantener la luz con un brillo estable y superior (25000lux en 1m). Durante todo el período desde el principio hasta el final, más de 13 horas, las lamparas KL5M, KL8M y KL12M llevarán a cabo el mismo brillo. El reflector diseñado con delicadeza y cristal ultra-clara ayuda reducen la absorción de la luz, lo que mejora en gran medida el brillo.

1.2 Pequeño, ligero y portátil

La cabeza globo de las lámparas con cable es muy pequeña como la fuente de luz LED es mucho más pequeño en tamaño y produce menos calor que requiere un radiador más pequeño. A pesar del pequeño tamaño, nuestro radiador es de alta eficiencia por su buen diseño. Además, la batería de Li-ion es sólo 1/3 del peso de la batería de plomo-ácido tradicional, que hace que estas lámparas con cable más pequeño, más ligero y portátil.

1.3 Seguro, confiable y libre de mantenimiento

La batería de Li-ion es libre de mantenimiento. Por otra parte, el paquete de baterías PCB puede proteger la batería de sobre carga, sobre descarga, sobre corriente y corto circuito para que la batería no va a explotar o quemarse. Por lo tanto, la seguridad y la fiabilidad de KL5M, KL8M y KL12M están bien garantizados.

1.4 A prueba de explosiones y super resistencia al impacto

La carcasa está hecha de PC a prueba de balas de la marca alemana Bayer. El diseño del molde optimizado no sólo refuerza la dureza de la carcasa, pero también disminuye la tensión interna, lo que hace que las lámparas con cable más fuerte en resistencia al impacto y más duradero en duración de la vida.

1.5 Impermeable estupendo

Las lámparas con cable son resistentes al agua superior con la cabeza de la lámpara bien diseñado a prueba de agua globo, caja de batería, interruptor de botón y las piezas de metal de acero inoxidable. Por lo tanto, es capaz de trabajar de forma estable en condiciones de trabajo duras.

1.6 Respetuoso del medio ambiente

Las lámparas con cable han sido diseñados de acuerdo con la directiva RoHS, que se sigue estrictamente durante todo el proceso, desde la selección de materiales para el diseño de producción artesanal.

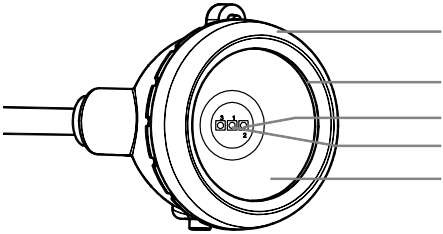
1.7 Una vida más larga

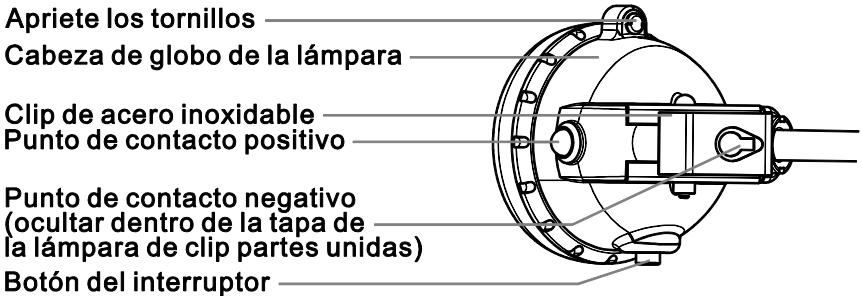
Las lámparas con cable pueden trabajar más de 13 horas después de cargado completamente. Su principal fuente de luz tiene una vida útil de más de 30000h después de aplicar a la lámpara. Batería de Li-ion se puede cargar más de 1200 ciclos si la lámpara funciona en condiciones razonables. Por lo tanto, no hay necesidad de reemplazar la fuente de luz y la batería durante toda su vida útil.

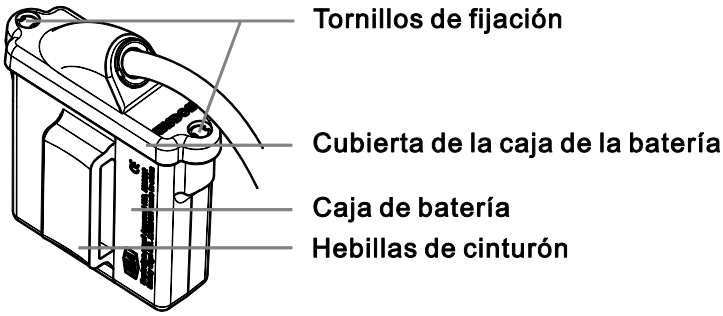
2. Especificaciones técnicas de las lámparas KL5M, KL8M, KL12M

Características	KL5M			KL8M			KL12M		
Trabajo tiempo	Estandar version	Largo trabajo tiempo version	Mas largo trabajo tiempo version	Estandar version	Largo trabajo tiempo version	Mas largo trabajo tiempo version	Estandar version	Largo trabajo tiempo version	Mas largo trabajo tiempo version
La cascoacidad nominal	6.6Ah			8.8Ah			12.4Ah		
Tensión nominal	3.7V								
Tiempo continuo de trabajar	13h	16h	24h	13h	16h	24h	13h	16h	24h
Principal de luz LED Voltaje de trabajo	3.0V								
Principal de luz LED de trabajo actual	580mA	430mA	340mA	800mA	580mA	430mA	1000mA	800mA	580mA
Potencia de luz principal	1.8W	1.3W	1W	2.4W	1.8W	1.3 W	3.0W	2.4W	1.8W
Principal flujo luminoso de luz	235 Lm	178Lm	148Lm	301Lm	235Lm	178Lm	359Lm	301Lm	235Lm
Lámpara de Iluminación en 1m	16000 Lux	11000 Lux	10000 Lux	23000 Lux	16000 Lux	11000 Lux	25000 Lux	23000 Lux	16000 Lux
Tramo principal la vida de luz	100000horas								
La luz de encendido auxiliar	0.4W								
Auxiliares abarcan la vida de luz	40000horas								
Cortocircuito proteger el tiempo de	<320μs								
La vida útil de la batería (recarga)	1200 cycles (in reasonable working conditions)								
carga tradicional	6h			8h			N/A		
carga inteligente rápido	4h			5h			6h		
Cable principal	1.4M/1.65M								
Dimensiones (de bacteria caja)	95x38x 84 mm			95x38x102 mm			95x38x102mm		
Peso	500g			550g			550g		

3. Piezas estructurales de la lámpara



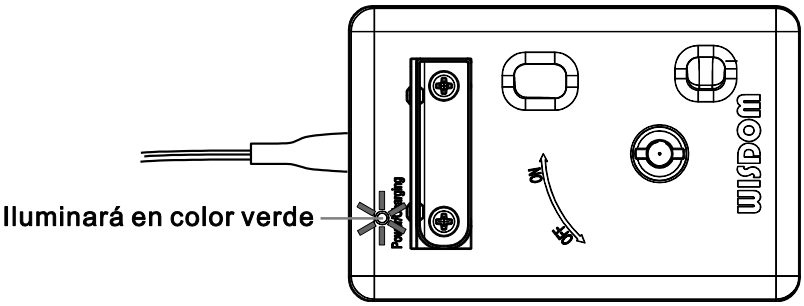

Apriete los tornillos
Cabeza de globo de la lámpara
Clip de acero inoxidable
Punto de contacto positivo
Punto de contacto negativo
(ocultar dentro de la tapa de
la lámpara de clip partes unidas)
Botón del interruptor



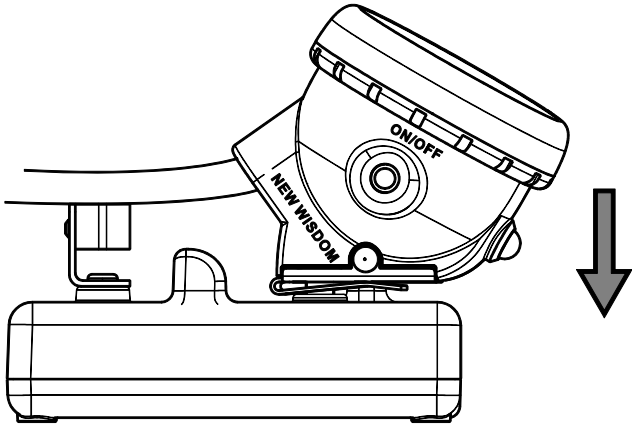
4. Guía del usuario

4.1 De carga

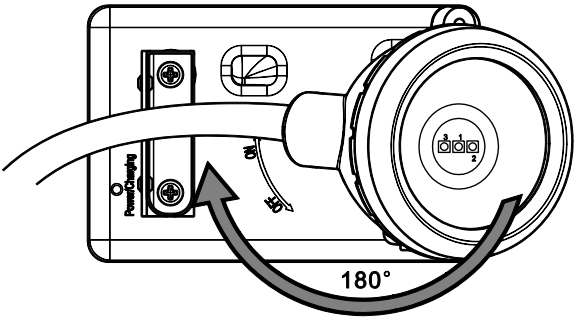
(1) Conecte el cargador únicamente en la fuente de alimentación o el interruptor en el estante del cargador, el indicador luminoso del cargador se pone verde.

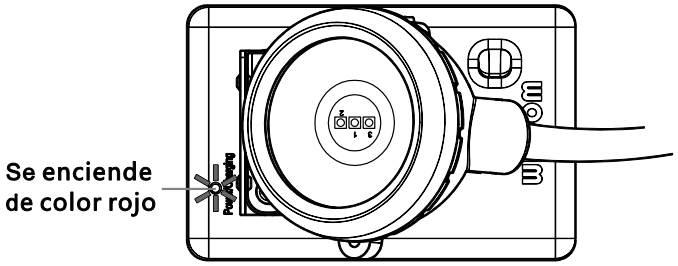


(2)Conecte el casquillo de la lámpara con cable con el cargador. Fije el pasador de latón (cátodo) del cargador en el orificio de la abrazadera lámpara.



(3)Gire la cabeza de la lámpara 180 grados hacia la derecha para asegurarse de que el toque del ánodo de la lámpara principal está estrechamente conectada con la base de metal conectado (ánodo). Entonces la luz indicadora se vuelve roja, lo que significa que la lámpara se está cargando.

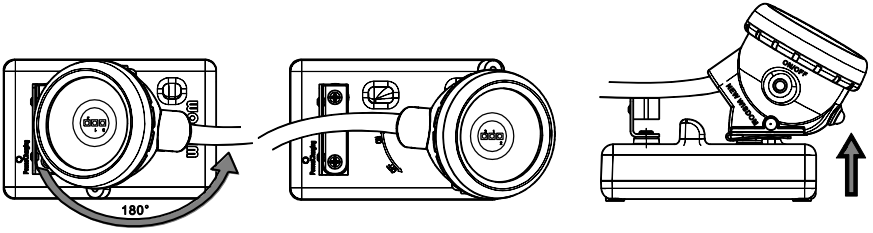




(4)Para el cargador rápido inteligente NWB-25/NWB-25A y bastidores cargador, cuando el indicador luz del cargador mantiene intermitente entre verde y rojo, significa que la batería se ha cargado al menos un 90%. Las lamparas KL5M/KL8M/KL12M puede trabajar más de 13h continuamente si la carga se detiene en este momento.

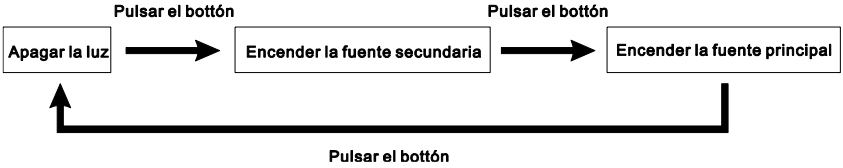
(5)Si el indicador luz del cargador NWB-20 y la cremallera cargador tradicional serie se ilumina en verde solamente, entonces la batería de KL5M/KL8M/KL12M se ha cargado completamente.

(6)Gire la cabeza de la lámpara 180 grados hacia la izquierda, tomar KL5M/KL8M/KL12M lejos del cargador para su uso.



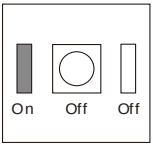
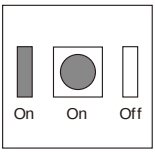
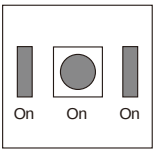
4.2 Cambiar

El interruptor eléctrico de KL5M/KL8M/KL12M es resistente al agua. Funciona de la siguiente manera:



4.3 Indicacion de bacteria

Cuando la lampara esta apagado, presione el interruptor de mas de 2 segundos. Entonces la suave lus de la fuente de luz principal y auxilliar indicara la bacteria restante. La informacion de indicacion de la forma siguiente:

bateria	indiccion
bateria≤1/3	
1/3< bateria≤2/3	
bateria >2/3	

Poder mostrar bateria de 6 segundos después de volver a apagar la lámpara de Estado

Nota: la bateria es una indicación aproximada indica, con fines de referencia.

4.4 Advertencia de batería baja

(1) Luces intermitentes de energía de la alarma general

Alrededor de 1 horas antes de la carga de la batería está fuera, la luz principal del LED de KL5M,/KL8M/KL12M parpadea suavemente (la luz está apagada cada 5 segundos) para recordar al usuario que la lampara esté a punto de agotarse y necesita ser recargada.

Si usted siente el parpadeo continuo de luz para influir en los efectos de iluminación, puede pulsar el botón del interruptor durante más de 2 segundos, que la principal Fuente de luz parpadea dos veces y se apagará la punta de parpadear. Así, la lámpara se enciende en condiciones normales de iluminación.

(2)La alarma de emergencia.

Alrededor de 10minutos antes de la carga de la batería está fuera urgencia, la luz principal del LED de KL5M/KL8M/KL12M parpadea suavemente (la luz está apagada cada 5 segundos) para recordar al usuario que la lampara esté a punto de agotarse y necesita ser recargada immediate;

5. Problemas y solución de problemas

Descripción del problema	Análisis de problemas	Solución de problemas
La luz no se enciende al pulsar el botón	La batería se ha agotado	Cargue la lámpara
El tiempo de trabajo es falta	La batería no está completamente cargada	Asegúrese de que la lámpara estaba bien conectado con el cargador cuando la carga

6. Notas

（1）KL5M/KL8M/KL12M son un medio cargado antes de la entrega, por favor cargar completamente antes de usar.

（2）Utilice nuestros cargadores coincidentes sólo para cargar KL5M/KL8M/KL12M. No utilice otros cargadores que no están especialmente diseñados para la batería de Li-ion, o la lámpara de la tapa puede estar dañado. Para asegurarse de que la seguridad y la fiabilidad, por favor cargue nuestras lámparas con nuestros cargadores que están especialmente diseñados para nuestras lámparas.

（3）Por favor, limpiar la lámpara de cristal de la cabeza a tiempo para el mejor rendimiento.

（4）Si las lámparas deben almacenar durante un largo período, repita los siguientes pasos de mantenimiento cada dos meses: full cargada→completamente descargada→cargada durante 1 hora.

7. Advertencias de seguridad

（1）Por favor, no disparar a los ojos directamente, mientras que la lámpara está funcionando ya que la luz fuerte dañará los ojos.

（2）Por favor, no desmonte el casquillo de la lámpara, o puede causar problemas potenciales relacionados con la seguridad, la fiabilidad, la resistencia al agua de trabajar bajo tierra.

（3）Por favor, no cuelgue y encender la lámpara.

（4）Por favor, no cargue el metro de la lámpara.

（5）Por favor, mantenga la lámpara alejada de fuentes de fuego.

（6）Por favor, no mantener la lámpara en el subterráneo. Todo el mantenimiento debe hacerse en el suelo!

（7）Por favor, no reparar por sí mismo el desmontaje, en caso contrario el fabricante no será responsable de la garantía.

（8）Por favor, reciclar la lámpara descartado juntos en lugar de tirarlas a la basura sin disponer.

8. Paquete

Cada conjunto de la lámpara de casco se presenta en una caja interior de 175x 100x 83 mm y 0,6 kg de peso.
20 cajas son embaladas en una caja de cartón con el tamaño de 38 x 22.5 x 44 cm y 13 kg peso.

9. Dibujo de piezas de KL5M, KL8M, KL12M

NEW WISDOM dibujo de la parte desde 2013.03 las partes de KL5M/KL8M/KL12M

1.cabazal

2.vidrio

3.bisel

4.pantalla

5.foco principal

6.radiador

7.boton piezas unidas

8.tablero de circuito principal

9.casco de cabaezal

10.tuerca, estera, sellado anillo para fijar el cable

11.piezas unidas clip

12.cerradura tornillo

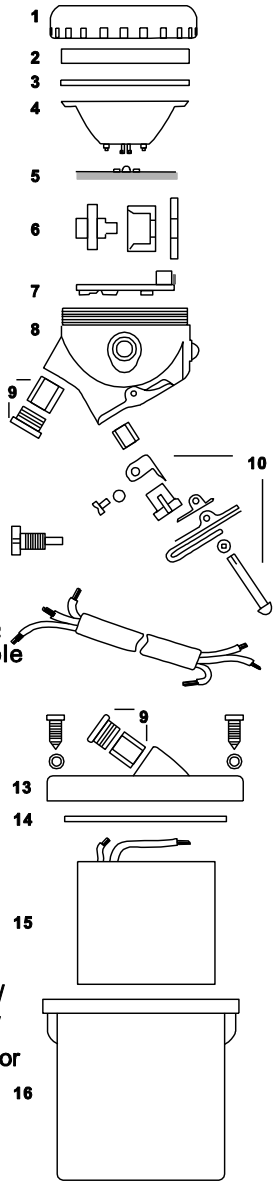
13.cable principal

14.tapa

15.el sellado anillo de casco bateria

16.KL5M 6.6 Ah bateria con tablero de circuito protector/
KL8M 8.8Ah bateria con tablero de circuito protector/
KL12M 12.4Ah bateria con tablero de circuito protector

17.casco bateria



WISDOM

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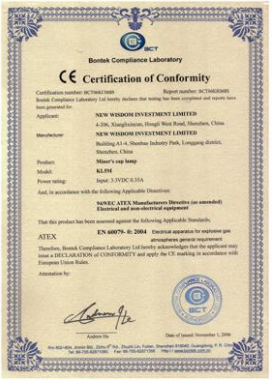
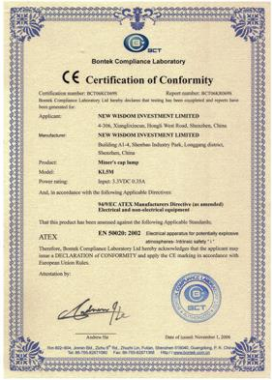
Dirección：4-306, xianglixincuen, Hongli West Road, shenzhen, China Código postal：518172

10. Patente de producto y certificación

Para obtener más información, por favor visite nuestro sitio web.


Bontek Compliance Laboratory
Certification of Conformity
NEW WISDOM INVESTMENT LIMITED
NEW WISDOM INVESTMENT LIMITED
Minor's cap lamp
KL5M
Input: 3.3VDC 0.35A
94/9/EC ATEX Manufacturers Directive (as amended)
Electrical and non-electrical equipment
EN 60079- 0: 2004 Electrical apparatus for explosive gas atmospheres-general requirement
ATEX

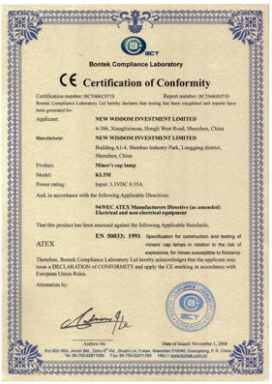
KL5M- Certificado CE


Bontek Compliance Laboratory
Certification of Conformity
NEW WISDOM INVESTMENT LIMITED
NEW WISDOM INVESTMENT LIMITED
Minor's cap lamp
KL5M
Input: 3.3VDC 0.35A
94/9/EC ATEX Manufacturers Directive (as amended)
Electrical and non-electrical equipment
EN 50020: 2002 Electrical apparatus for potentially explosive atmospheres-Intrinsic safety "i"
ATEX

KL5M- Certificado CE

Bontek Compliance Laboratory
Certification of Conformity
NEW WISDOM INVESTMENT LIMITED
NEW WISDOM INVESTMENT LIMITED
Minor's cap lamp
KL5M
Input: 3.3VDC 0.35A
94/9/EC ATEX Manufacturers Directive (as amended)
Electrical and non-electrical equipment
EN 62013-1: 2002 Cap lights for use in miners susceptible to firedamp-general requirements — construction and testing in relation to the risk of explosion
ATEX

KL5M- Certificado CE


Bontek Compliance Laboratory
Certification of Conformity
NEW WISDOM INVESTMENT LIMITED
NEW WISDOM INVESTMENT LIMITED
Minor's cap lamp
KL5M
Input: 3.3VDC 0.35A
94/9/EC ATEX Manufacturers Directive (as amended)
Electrical and non-electrical equipment
EN 50033: 1991 Specification for construction and testing of mines' cap lamps in relation to the risk of explosions, for mines susceptible to firedamp
ATEX

KL5M- Certificado CE

Shenzhen Bontek Electronic Technology Co., Ltd.
Certificate of Conformity
NEW WISDOM INVESTMENT LIMITED
LED Safety cap lamp
KL5M
2004/108/EC Electromagnetic Compatibility (as amended)
EN 55015: 2006+A2:2009
EN 61547: 2009
EMC

KL5M- Certificado CE

Shenzhen Bontek Electronic Technology Co., Ltd.
Certificate of Conformity
NEW WISDOM INVESTMENT LIMITED
LED Safety cap lamp
WISDOM
KL5M
94/9/EC ATEX Manufacturers Directive (as amended)
Electrical and non-electrical equipment
EN 50020: 2002
EN 50033: 1991
EN 62013-1: 2002
EN 60079- 0: 2004
ATEX

KL5M- Certificado CE

Shenzhen Bontek Electronic Technology Co., Ltd.
Certificate of Conformity
NEW WISDOM INVESTMENT LIMITED
NEW WISDOM INVESTMENT LIMITED
LED Safety cap lamp
KL5M
2004/108/EC Electromagnetic Compatibility (as amended)
EN 55015: 2006+A2:2009
EN 61547: 2009
EMC

KL5M- Certificado CE

Shenzhen Bontek Electronic Technology Co., Ltd.
Certificate of Conformity
NEW WISDOM INVESTMENT LIMITED
NEW WISDOM INVESTMENT LIMITED
LED Safety cap lamp
WISDOM
KL8M
94/9/EC ATEX Manufacturers Directive (as amended)
Electrical and non-electrical equipment
EN 50020: 2002
EN 50033: 1991
EN 62013-1: 2002
EN 60079- 0: 2004
ATEX

KL8M- Certificado CE

Shenzhen Bontek Compliance Testing Laboratory Co., Ltd.
Certificate of Conformity
NEW WISDOM INVESTMENT LIMITED
NEW WISDOM INVESTMENT LIMITED
LED Safety cap lamp
WISDOM
KL5M-C
2004/108/EC Electromagnetic Compatibility (As Amended)
EN 55015: 2006+A2: 2009
EN 61547: 2009
EMC

KL5M- C—Certificado CE

Software de computadora copyright

Software de computadora copyright

KL5M/KL8M/KL12M- Certificado CE

Patente de modelo de utilidad

Patente de modelo de utilidad

Patente de modelo de utilidad

Patente de modelo de utilidad

Patente de modelo de utilidad

KL5M- Certificado CE

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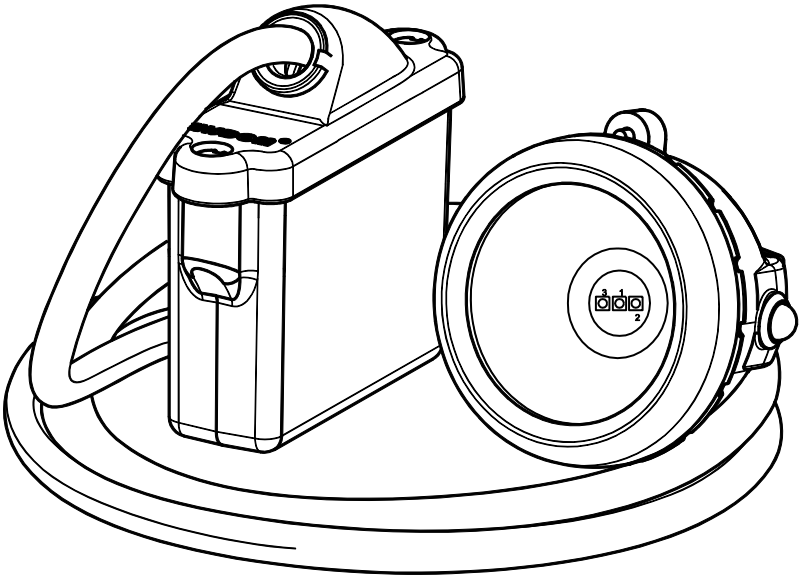
9 KL5M、KL8M 和 KL12M 矿灯部件图 11



中文

1 产品特性

创新设计的 New Wisdom 锂电池矿灯 KL5M 结合了最先进的 235 流明 LED 光源技术和 6.6Ah 大容量锂电池技术，以创造出更亮更轻的矿灯；KL8M 矿灯是以最新技术 301 流明的 LED 作为光源，以 8.8Ah 锂离子电池作电源的便携式照明设备；KL12M 矿灯是以最新技术的 359 流明 LED 作为光源，以 12.4Ah 锂离子电池组作电源的便携式照明设备；矿灯独特的设计使其能承受的最严酷的地下工作条件如煤矿、金属矿山等。其显著特性如下：

1.1 稳定的超高亮度

（1）KL5M 矿灯采用了先进的 LED 光源以及先进的驱动电路板，使得矿灯保持稳定的高亮度（其在一米内的照度维持在 16000lux），有 3 种不同的版本供选择：标准版工作时间>13 小时、长工时版工作时间>16 小时、超长工时版>24 小时。

（2）KL8M 矿灯的主光源采用了世界先进的 LED 光源，而且采用了先进的驱动电路，使得矿灯能保持稳定的超高亮度；有 3 种不同的版本供选择：标准版工作时间>13 小时、长工时版工作时间>16 小时、超长工时版>24 小时。

（3）KL12M 矿灯的主光源采用了世界先进的 359 流明 LED 光源，而且采用了先进的驱动电路，使得矿灯能保持稳定的超高亮度(一米内大于 25000lux)，有 3 种不同的版本供选择：标准版工作时间>13 小时、长工时版工作时间>16 小时、超长工时版>24 小时。

（4）KL5M、KL8M 和 KL12M 的矿灯在整个工作期间，矿灯都将保持相同的亮度，精心设计的反光杯和超透亮的玻璃面都会有效减少光的吸收，以优化和提高光效。

1.2 体积小•重量轻，方便携带

矿灯的光源采用 LED，体积和发热量都远小于灯泡，所以灯头可以做得更小型化。KL5M/KL8M/KL12M 矿灯采用锂离子电池，重量只是传统铅酸电池的 1/3。

1.3 安全可靠，免维护

矿灯所采用的锂电池具有免维护的特性。电池组的保护电路具有对过度充电，过度放电，电流过大，短路等问题的多重保护功能，保证电池不会因过充、温度过高、短路、撞击而产生爆炸或燃烧。从而确保矿灯使用的安全。

1.4 防爆和超级耐冲击

矿灯的壳体使用防弹级 PC 材料制成。优化设计的模型不仅保证了壳体的强度并且减小了内应力，这使得矿灯拥有更强的耐冲击力和更经久耐用。

1.5 超强的防水功效

矿灯采用了严谨的防水设计，金属部件如帽钩等都采用了不锈钢材料以保证矿灯卓越的防水能力使其能够在苛刻的环境下稳定工作。

1.6 对环境无害

矿灯的设计完全遵守《危害性物质限制指令》(RoHS)。 危害性物质限制指令的执行贯穿于整个生产流程，从原材料的挑选到制造工艺的设计都严格遵照该指令。

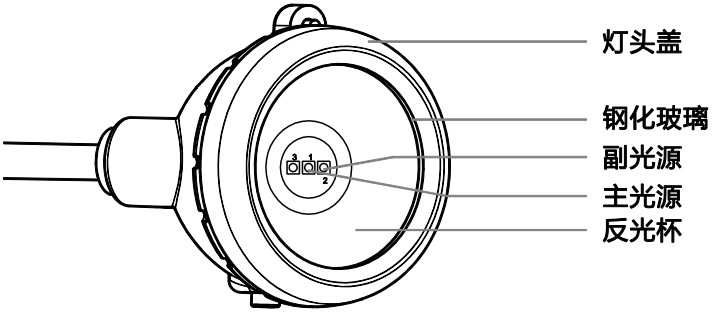
1.7 更长的使用寿命

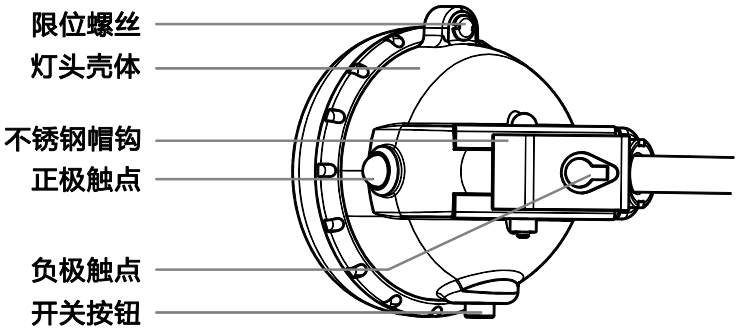
在充满电的情况下，矿灯能够持续工作 13 个小时。矿灯的主光源拥有大于 100000 小时的使用寿命，如果在正常条件下工作，锂电池可以重复充电 1200 次。因此在矿灯的整个使用寿命内无需更换锂电池和光源。

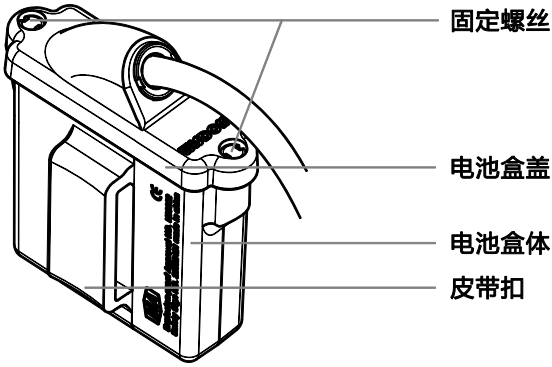
2 NEW WISDOM 矿灯技术规格

特性	KL5M			KL8M			KL12M		
工作时间版本	标准版	长工时版	超长工时版	标准版	长工时版	超长工时版	标准版	长工时版	超长工时版
额定容量	6.6Ah			8.8Ah			12.4Ah		
额定电压	3.7V								
持续工作时间	13h	16h	24h	13h	16h	24h	13h	16h	24h
LED 主光源工作电压	3.0V								
LED 主光源工作电流	580mA	430mA	340mA	800mA	580mA	430mA	1000mA	800mA	580mA
主光源功率	1.8W	1.3W	1W	2.4W	1.8W	1.3 W	3.0W	2.4W	1.8W
主光源发光强度	235 Lm	178Lm	148Lm	301Lm	235Lm	178Lm	359Lm	301Lm	235Lm
灯亮度(一米的距离初始亮度)	16000 Lux	11000 Lux	10000 Lux	23000 Lux)	16000 Lux	11000 Lux	25000 Lux)	23000 Lux)	16000 Lux
主光源工作寿命	100000 小时								
副光源功率	0.4W								
副光源工作寿命	40000 小时								
短路保护时间	<320μs								
电池工作寿命(重复充电)	1200 次 (在合理的工作条件下)								
由 NWB-20 充电的时间	6 小时			8 小时			N/A		
由 NWB-25 充电的时间	4 小时			5 小时			6 小时		
电缆线长度	1.4 米或 1.65 米								
尺寸(电池盒尺寸)	95x38x 84 mm			95x38x102 mm			95x38x102mm		
重量	500g			550g			550g		

3 NEW WISDOM 矿灯结构组件



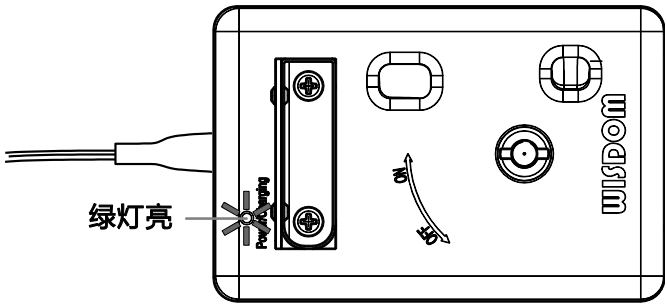




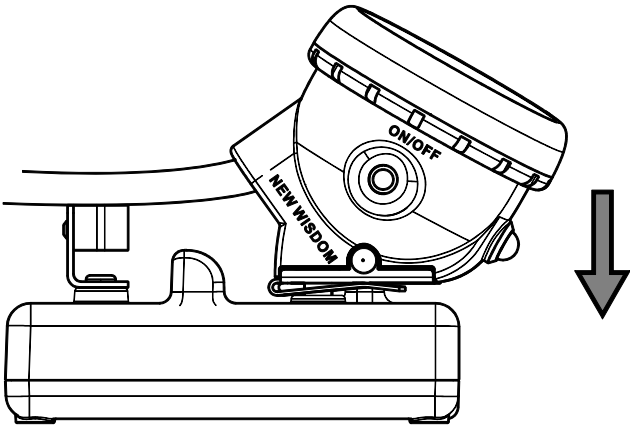
4　KL5M、KL8M 和 KL12M 矿灯使用方法

4.1　充电

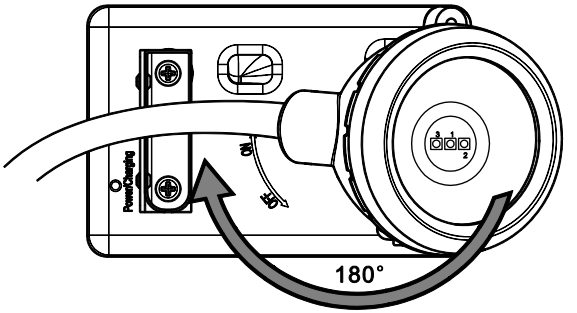
（1）插上单体充电器的电源或打开充电架的开关，充电器的指示灯为绿色。

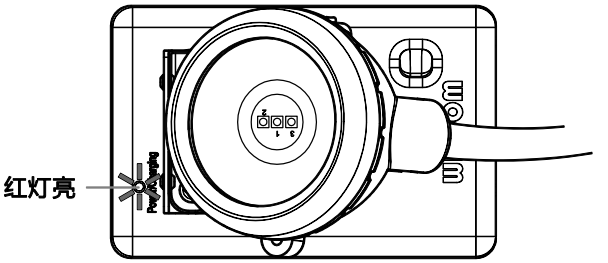


（2）顺着帽钩组件中的限位装置把矿灯放置在充电器的负极弹头上。



（3）把灯头顺时针转动 180 度，确保灯头的正极触点和充电器的正极弹片紧密接触。此时充电器的指示灯为红色，表示正在充电。

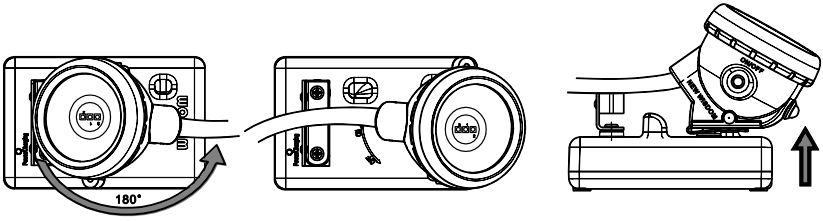




（4）如果使用 NWB-25/NWB-25A 便携式充电器或智能快充版充电架来充电，当充电器的指示灯红、绿相间地闪烁时，表示电池已经充至>90%。如果此时把矿灯从充电器上取下来使用，也能连续工作超过 13 个小时。当充电器的指示灯为绿灯闪烁时，表示电池已经完全充满。

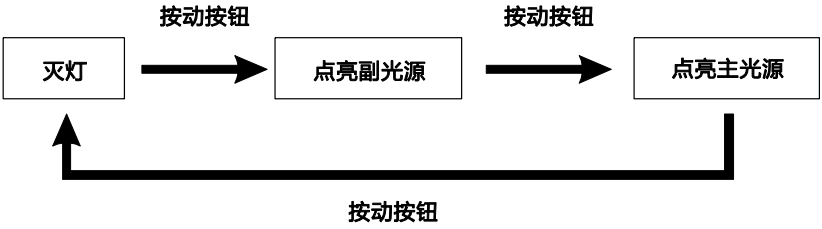
（5） 如果使用 NWB-20 便携式充电器或标准版充电架来充电，当充电器的指示灯变成绿色时，表示电池已经完全充满。

（6）把灯头逆时针旋转 180 度， 再取出灯头，使矿灯和充电器完全分离。



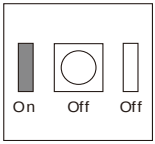
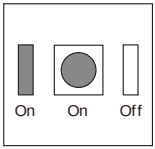
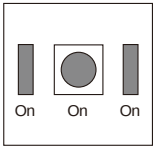
4.2 矿灯的开关

KL5M、KL8M 和 KL12M 的开关都是防水设计的电子开关。按动开关的操作循环如下：



4.3 电量指示

在矿灯熄灭的状态下，长按开关按键超过 2 秒钟，主、副光源的弱光进行电量指示。各 LED 在电量指示中的含义如下表所示：

电池电量	指示灯状态
电池电量≤1/3 满	
1/3 满<电池电量≤2/3 满	
电池电量>2/3 满	

电量显示 6 秒钟后，矿灯恢复到熄灭状态。

注意：矿灯的电量指示只是一个大概的指示，仅供参考。

4.4 欠电指示

（1）一般电量告警闪灯

在电池的电量耗尽前约 1 小时， KL5M、KL8M 和 KL12M 矿灯主光源会有规律明暗交替闪烁（每 5 秒闪烁一次），用于一般电量告警闪灯提示电池电量快耗尽了，需要重新充电。如果不希望矿灯的闪烁而影响照明效果，可以一直按住开关超过 2 秒。矿灯主光源会连续闪烁两次，然后就能把闪烁提示取消掉。矿灯恢复在正常照明的状态。

（2）紧急电量告警闪灯

在电池电量仅足以维持照明 10 分钟左右的时候， 矿灯主光源会有规律明暗交替快闪（每 2 秒闪烁一次），用于紧急电量告警闪灯提示电池电量已经耗尽了，需要马上充电或切换到副光源照明。

5 常见故障和处理方法

故障描述	故障分析	处理方法
按键不能开灯	电池电量耗尽	将矿灯接到充电器上充电
放电时间不足	电池没充满	充电时确保矿灯和充电器的良好接触

6　注意事项

（1）矿灯出厂前已经充电至半饱，使用前应先用充电器对矿灯充电至充满。

（2）必须采用本产品配套的单体充电器或充电架进行充电，如果使用非针对锂离子电池设计的其他充电器充电，会损坏矿灯。

（3）为了保证矿灯的照明质量，请注意及时清洁矿灯的灯头玻璃。

（4）如果矿灯长时间不用，请每隔两个月进行一次这样的操作：完全充电→完全放电→1 小时充电的维护操作。

7　安全警示

（1）矿灯在工作时不能直接对人眼睛照射，否则强光会损伤人的视力。

（2）严禁随意拆卸矿灯的零部件，缺少零件的矿灯严禁下井使用，否则会影响安全性或可靠性。

（3）严禁摔打矿灯。.

（4）严禁在井下对矿灯充电。

（5）严禁将矿灯靠近或投入火源中。

（6）严禁在井下拆、卸矿灯或更换零部件。矿灯的维护、维修工作必须在地面进行！不能随意改变矿灯结构及零部件。

（7）不得擅自拆卸、维修电池部件。

（8）报废矿灯应集中处理，不得随意丢弃。

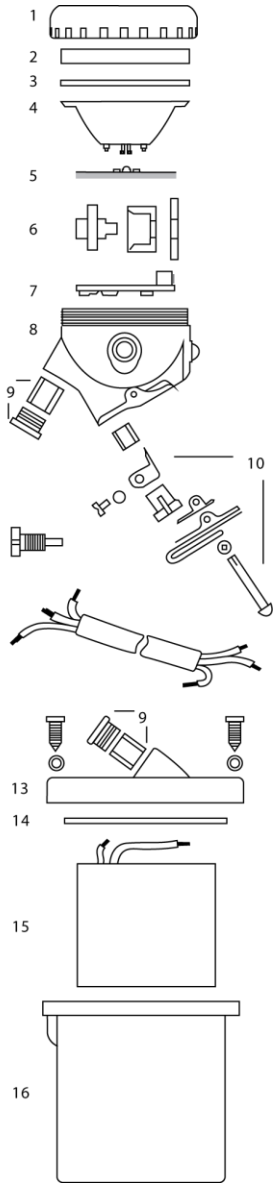
8 包装

每套矿灯纸盒包装，外型尺寸：175 x 100 x 83 mm，0.6kg
外箱包装，每箱 20 盒，外型尺寸：38 x 22.5 x 44 cm，13kg

9　KL5M、KL8M 和 KL12M 矿灯部件图

新智慧 KL5M/KL8M/KL12M 灯头配件图

-自2013.03



1.灯头盖

2.灯面玻璃

3.灯头密封圈

4.反射器

5.LED光源及及铝散热器

6.按钮组件

7.灯头电路板

8.灯头壳体

9.紧固电缆线的锁母及密封圈

10.帽钩组件

11.灯头盖限位螺丝

12.电缆线

13.电池盒盖

14.电池盒密封圈

15.6.6Ah(KL5M)/8.8Ah(KL8M)/12.4Ah(KL12M)
带保护电路板的锂离子电池组件

16.电池盒体

WISDOM

电话：+86-755-83911841

www.wisdom.hk

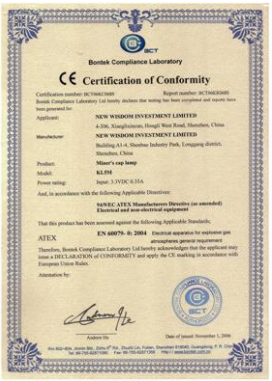
邮编：518172

工厂地址：深圳龙岗区宝荷路嶂背大道 9 号 4 楼

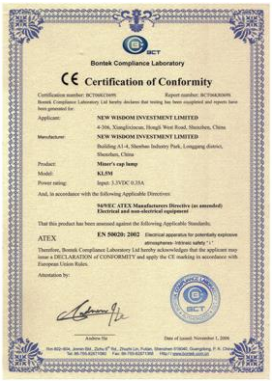
邮箱：info@wisdom.hk

10 产品专利和认证

更多信息请登录公司网站查询


Bontek Compliance Laboratory
Certification of Conformity
NEW WISDOM INVESTMENT LIMITED
4-306, Xiangfeiyuan, Hongli West Road, Shenzhen, China
Minor's cap lamp
KL5M
Input: 3.3VDC 0.35A
94/9/EC ATEX Manufacturers Directive (as amended)
Electrical and non-electrical equipment
EN 60079- 0: 2004
ATEX

KL5M-CE 证书


Bontek Compliance Laboratory
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KL5M
Input: 3.3VDC 0.35A
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Electrical and non-electrical equipment
EN 50020: 2002
ATEX

KL5M-CE 证书

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Minor's cap lamp
KL5M
Input: 3.3VDC 0.35A
94/9/EC ATEX Manufacturers Directive (as amended)
Electrical and non-electrical equipment
EN 62013-1: 2002
ATEX

KL5M-CE 证书

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KL5M
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94/9/EC ATEX Manufacturers Directive (as amended)
Electrical and non-electrical equipment
EN 50020: 2002
EN 50303: 1991
ATEX

KL5M-CE 证书

Shenzhen Bontek Electronic Technology Co., Ltd.
Certificate of Conformity
NEW WISDOM INVESTMENT LIMITED
4-306,Xiangfeiyuan,hongli West Road,Shenzhen,China
NEW WISDOM INVESTMENT LIMITED
4-306,Xiangfeiyuan,hongli West Road, Shenzhen, China
LED Safety cap lamp
KL5M
2004/108/EC Electromagnetic Compatibility (as amended)
EN 55015: 2006+A2:2009
EMC
EN 61547: 2009

KL5M-CE 证书

Shenzhen Bontek Electronic Technology Co., Ltd.
Certificate of Conformity
NEW WISDOM INVESTMENT LIMITED
4-306,Xiangfeiyuan,hongli West Road,Shenzhen,China
NEW WISDOM INVESTMENT LIMITED
4-306,Xiangfeiyuan,hongli West Road, Shenzhen, China
LED Safety cap lamp
WISDOM
KL5M
Input: DC3.6V 0.35A/0.45A 6.6Ah
94/9/EC ATEX Manufacturers Directive (as amended)
Electrical and non-electrical equipment
EN 50020: 2002
EN 50303: 1991
EN 62013-1: 2002
EN 60079- 0: 2004
ATEX

KL5M-CE 证书

Shenzhen Bontek Electronic Technology Co., Ltd.
Certificate of Conformity
NEW WISDOM INVESTMENT LIMITED
4-306,Xiangfeiyuan,hongli West Road,Shenzhen,China
NEW WISDOM INVESTMENT LIMITED
4-306,Xiangfeiyuan,hongli West Road, Shenzhen, China
LED Safety cap lamp
KL8M
2004/108/EC Electromagnetic Compatibility (as amended)
EN 55015: 2006+A2:2009
EMC
EN 61547: 2009

KL8M-CE 证书

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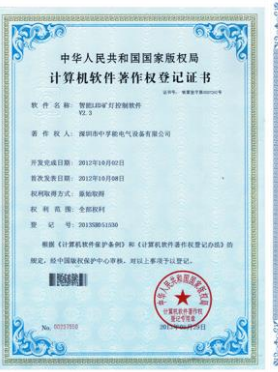
NEW WISDOM INVESTMENT LIMITED
4-306,Xiangfeiyuan,hongli West Road,Shenzhen,China
NEW WISDOM INVESTMENT LIMITED
4-306,Xiangfeiyuan,hongli West Road, Shenzhen, China
LED Safety cap lamp
WISDOM
KL8M
Input: DC5.8V 0.35A/0.35A/0.7A 8.8Ah
94/9/EC ATEX Manufacturers Directive (as amended)
Electrical and non-electrical equipment
EN 50020: 2002
EN 50303: 1991
EN 62013-1: 2002
EN 60079- 0: 2004
ATEX

KL8M-CE 证书

Shenzhen Bontek Compliance Testing Laboratory Co., Ltd.
Certificate of Conformity
NEW WISDOM INVESTMENT LIMITED
4-306,Xiangfeiyuan,hongli West Road,Shenzhen,China
NEW WISDOM INVESTMENT LIMITED
4-306,Xiangfeiyuan,hongli West Road, Shenzhen, China
LED Safety cap lamp
WISDOM
KL5M-C
2004/108/EC Electromagnetic Compatibility (As Amended)
EMC
EN 55015: 2006+A2: 2009
EN 61547: 2009
ATEX

KL5M-C—CE 证书

计算机软件著作权



计算机软件著作权

KL5M/KL8M/KL12M-CE 证书

实用新型专利

实用新型专利

实用新型专利

实用新型专利

实用新型专利

KL5M-CE 证书

U.S. Department of Labor

Mine Safety and Health Administration
Approval and Certification Center
765 Technology Drive
Triadelphia, West Virginia 26059

Approval No. 19-A090001-0
A&CC PAR No. 93187

June 16, 2009

United Mining Equipment, Inc.
Attention: Mr. Dustin Winkler
579 Pittsburgh Road
Butler, Pennsylvania 16002-7659

Dear Mr. Winkler:

The review of your application requesting a new approval for your Model KL5M LED Miner's Cap Lamp Assembly, Company Application Code No. 000002, is complete.

The design of this Model KL5M Cap Lamp Assembly meets the requirements of Title 30 Code of Federal Regulations, Part 19 and is approved as permissible for use in gassy underground mines. We assign Approval No. 19-A090001-0 to this design.

The following requirements apply to Approval No. 19-A090001-0:

1. You must build each Model KL5M Cap Lamp Assembly bearing this approval number according to the drawings and specifications on file at the MSHA Approval and Certification Center. A list of these drawings and specifications is enclosed.

2. Our approval label information must be legibly reproduced with permanent lettering on a wear resistant material and must be prominently displayed on an exterior surface of this Model KL5M Cap Lamp Assembly (see the enclosed official approval label information required for this cap lamp). All of the approval label information must appear on the approval label.

3. You are not permitted to make changes to the design of this Model KL5M Cap Lamp Assembly without our approval.

4. We may require you to make changes to the design, or to modify the Model KL5M Cap Lamp Assembly in the field, in the interest of safety.

5. We have the right to revoke this approval, for cause, at any time.

6. The following requirements apply to the use of this Model KL5M Cap Lamp Assembly:

   a. The batteries are not to be replaced by the user.

   b. The cap lamp is only to be charged in fresh air.

You will receive an invoice for the cost to process your application.

If you have any comments or questions relative to this letter, please contact Terry Garrison at 304-547-2016.

Sincerely,

John P. Faini
Chief, Approval and Certification Center

Enclosures

UNITED MINING EQUIPMENT
NEW WISDOM MODEL KL5M
PERMISSIBLE CAP LAMP ASSEMBLY

United States Department of Labor
MSHA
Mine Safety and Health Administration

APPROVAL NO. 19-A090001-0

TESTED FOR INTRINSIC SAFETY IN METHANE-AIR MIXTURES ONLY

WARNINGS:
1. THE BATTERIES ARE NOT TO BE REPLACED BY THE USER.
2. THE CAP LAMP IS ONLY TO BE CHARGED IN FRESH AIR.

TEST REPORT

Client name: NEW WISDOM INVESTMENT LIMITED.

Client address: 4-306, XIANGLIXINCUN, HONGLI WEST ROAD, SHENZHEN, CHINA.

Sample name: LED Safety cap lamp

Sample model: KL5M

Sample quantity: 1PCS

Testing period: From May 18, 2012 to May 23, 2012

Test item:
As specified by client, to do IP68 test on the submitted samples.

Test method:
EN60529:1991+A1:2009

Test conclusion:
Pass

Tested by: (Signature) Inspected by: (Signature) Approved by: (Signature)

Shenzhen Bontek Compliance Testing Laboratory Co. Ltd.
Issued Date: May 24, 2012

Notes:
The test report is responsible to the sample accepted by the laboratory only. The test report is invalid without the stamp of "signature seal of test unit", the modified report is invalid, The part of Copy report is invalid, The test report without the signatures of operator, supervisor and manager is invalid; when there is disagreement to the test report, The test unit should be informed within 15 days since the report is received by the client, Overdue information will not be accepted.

Description of sample:
Test before, Sample no damage, no abnormal phenomenon.

Test equipment or instrument:

Testing Item(s)	Instrument(s) /Appliance(s)
Dust-tight test	Dust-proof Box
Water-tight test	Pontoon

Test result:

Testing Item(s)	Dust-tight test
Testing Method/Appliance	Sub atmospheric pressure applied Dust-proof Box
Testing Condition	Talc *applied in testing; Content: 2Kg/m³ in testing box; Applied times: 18; Testing Duration: 8H;
Requirements of IP 6X	No ingress of dust.
Testing Result	No ingress of dust.
Test conclusion	Pass

Testing Item(s)	Water-tight test
Testing Method/Appliance	Pontoon applied
Testing Condition	Immersion the enclosure in water. Including the electrical connections with pins, waterproof lights, PG plug, antenna processing Block. Water-level on enclosure: 0.15m above top, 1m above bottom. Testing Duration: 30min. Test pressure: 0.2bar.
Requirements of IP X8	Prevent powerful jet of water; the ingress of water should not be harmful.
Testing Result	No ingress of water.
Test conclusion	Pass

Notes:
-Talc powder has been filtrated by metal square hole sieve, pore size is 75 μ m.
-Test environment temperature and Relative humidity: 25℃, 58%RH.

Appendix:

Photo 1 Test sample view

Photo 2 Dust-tight testing view

Photo 3 Water-tight testing view

Photo 4 Test after sample view

End of Report

TEST REPORT

Client name: NEW WISDOM INVESTMENT LIMITED.

Client address: 4-306, XIANGLIXINCUN, HONGLI WEST ROAD, SHENZHEN, CHINA.

Sample name: LED Safety cap lamp

Sample model: KL8M

Sample quantity: 1PCS

Testing period: From May 18, 2012 to May 23, 2012

Test item:
As specified by client, to do IP68 test on the submitted samples.

Test method:
EN60529:1991+A1:2009

Test conclusion:
Pass

Tested by: (Signature) Inspected by: (Signature) Approved by: (Signature)

Shenzhen Bontek Compliance Testing Laboratory Co. Ltd.
Issued Date: May 24, 2012

Notes:
The test report is responsible to the sample accepted by the laboratory only. The test report is invalid without the stamp of "signature seal of test unit", the modified report is invalid. The part of Copy report is invalid, The test report without the signatures of operator, supervisor and manager is invalid; when there is disagreement to the test report, The test unit should be informed within 15 days since the report is received by the client, Overdue information will not be accepted.

Description of sample:
Test before, Sample no damage, no abnormal phenomenon.

Test equipment or instrument:

Testing Item(s)	Instrument(s) /Appliance(s)
Dust-tight test	Dust-proof Box
Water-tight test	Pontoon

Test result:

Testing Item(s)	Dust-tight test
Testing Method/Appliance	Sub atmospheric pressure applied Dust-proof Box
Testing Condition	Talc *applied in testing; Content: 2Kg/m³ in testing box; Applied times: 18; Testing Duration: 8H;
Requirements of IP 6X	No ingress of dust.
Testing Result	No ingress of dust.
Test conclusion	Pass

Testing Item(s)	Water-tight test
Testing Method/Appliance	Pontoon applied
Testing Condition	Immersion the enclosure in water, including the electrical connections with pins, waterproof lights, PG plug, antenna processing Block. Water-level on enclosure: 0.15m above top. 1m above bottom. Testing Duration: 30min. Test pressure: 0.2bar.
Requirements of IP X8	Prevent powerful jet of water; the ingress of water should not be harmful.
Testing Result	No ingress of water.
Test conclusion	Pass

Notes:
-Talc powder has been filtrated by metal square hole sieve, pore size is 75 μ m.
-Test environment temperature and Relative humidity: 25℃、58%RH.

Appendix:

Photo 1 Test sample view

Photo 2 Dust-tight testing view

Photo 3 Water-tight testing view

Photo 4 Test after sample view

End of Report

Reason to choose WISDOM miner cap lamp

(1) Stable and super bright
(2) Safe, reliable and maintenance-free
(3) Small, light and portable
(4) Explosion- proof and super impact-resistance
(5) Super waterproof
(6) Environmentally-friendly
(7) Longer life span

WISDOM
NEW WISDOM INVESTMENT LIMITED

Telephone: +86-755-83911841
Mailbox: info@wisdom.hk
Address: 4-306, xianglixincuen, Hongli West Road, Shenzhen, China Zip code: 518034

www.wisdom.hk